

with rapid movements of the proboscis. With prey too large to be ingested whole, *Eteone* would break off a small piece, ingest it, and resume the chase, ingesting additional portions. Field observations showed *Eteone* feeding on both *Nereis succinea* and cannibalistically on other *E. heteropoda*.

LABORATORY EXPERIMENTS

In the laboratory, *E. heteropoda* were maintained in an artificial flat composed of sand from the natural habitat covered with four inches of circulating sea water. As long as the artificial flat was covered with a layer of water, the worms remained burrowed into the substratum. Within 15 minutes of the time the water was allowed to drain off the sand surface, in simulation of a receding tide, the animals came to the surface and began searching movements.

Preliminary experiments to determine the detection of worm trails and preference of food organisms were carried out in the laboratory as follows. A *Nereis* was slowly dragged over the surface of the sand with a pair of forceps, creating an artificial trail. Observations of *Eteone* movements were then made. When *E. heteropoda* came upon the artificial trail, the animal would change its course and follow the trail wherever it led. When *Nereis* trails were made to intersect *Eteone* trails, *Eteone* would normally follow the *Nereis* trail, thus exhibiting some preference for *Nereis*. On a single occasion when presented with a trail made by another polychaete, *Scoloplos ruber*, there was an apparent withdrawal of *Eteone*, perhaps an indication of avoidance. More experiments pertaining to food preference are being carried out along with histological studies of the sensory receptors involved in prey detection.

CONCLUSIONS

Sanders et al. (1962) reported that *E. heteropoda* from Barnstable Harbor, Massachusetts, was "a deposit feeder almost exclusively," i.e., a form which indiscriminately ingested quantities of substratum, digested the organic matter (diatoms, dinoflagellates, detritus), and egested the indigestible residues. These observations were based on stomach analysis of five specimens. Khlebovich (1959) reported that *Eteone longa*, a closely related species, was a predator, feeding almost exclusively on *Spio filicornis*. From the

present report it appears that *E. heteropoda* is also a carnivore, feeding on living animals. So we must tentatively consider this species to be omnivorous, utilizing two methods to obtain food. *Eteone* apparently is a deposit feeder while the tide is in and a predator when the tide is out.

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